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SCHOOL AGED CHILD WITH OBSTRUCTIVE HYDROCEPHALUS: A CASE REPORT

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ABSTRACT

BACKGROUND:

Hydrocephalus is a greatest common cause for brain surgeries in children. Obstructive hydrocephalus is a condition seen in child by birth with accumulation of cerebrospinal fluid in ventricular system of the brain. The word hydrocephalus simply denotes water in head. This can be cause by infections or teratogens.

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OBJECTIVES: This study compiled and reported the patient diagnosed with obstructive hydrocephalus in an effort to provide the summary of the condition.

CASE SUMARRY

We report the case of a schooler, 8-year-old, female child transferred to a tertiary care Hospital with the presenting complaints of enlargement of head, bulging fontanels, head ache. Assessment was beginning with collection of past and present medical and surgical history. Anthropometric measurements were taken into consideration. An extensive diagnostic evaluation including CT-Scan, MRI, and skull X-rays were performed to rule out the condition. Finally, the child was diagnosed as obstructive hydrocephalus and put under treatment.

CONCLUSION

The patient had undergone Endoscopic third Ventriculostomy (ETV) procedure and discharged from the hospital. Constant self-observations were made from admission to the discharge of the child to collect the data. The parents were educated regarding the home care aspects and follow up.

INTRODUCTION

Obstructive hydrocephalus also known as non-communicating hydrocephalus. It is a form of hydrocephalus which is caused by visible blockage in the physiological flow of cerebrospinal fluid into the ventricular system of the brain. One of the most common sites in the brain for obstruction is the cerebral aqueduct. This area becomes narrowed in the ventricles within the brain and leads to obstruction.

CASE PRESENTATION

An8-year-old, female school age child named was admitted inthe pediatric ward of a tertiary care hospital with the complaints of enlargement of head, respiratory distress, fever, cough, head ache and acute pain.

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HISTORY OF PAST ILLNES

The baby was having no any past medical as well as surgical history in the past.

CHILD'S PERSONAL HISTORY (during Hospitalization)

The patient was admitted to grade 3 in a nearby school of their residence and She is basically a vegetarian; her bowel and elimination pattern was altered due to disease process. She was not able to sleep due to acute pain and atmosphere of hospitalization. She was not allergic to any food items and medicines. The child was vaccinated against the communicable diseases according to the national immunization schedule.

FAMILY HISTORY

She belonged to a nuclear, lower middle-class family. Her father was the bread winner of the family and feeding five family members. The family history revealed that there was no incidence of communicable and non-communicable diseases running in the family.

IMMUNIZATION HISTORY

The child was vaccinated against the communicable diseases as per the national immunization schedule.

PRESENT MEDICAL HISTORY

After the thorough physical and biological examination, the child was diagnosed as having obstructive Hydrocephalus. Diuretics had been prescribed for the patient and vital parameters were continuously monitored.

PRESENT SURGICAL HISTORY

The patient had undergone Endoscopic third Ventriculostomy (ETV) procedure to correct obstructive hydrocephalus.

ANTHROPOMETRIC MEASUREMENTS

- Height: 124 cm

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- Weight: 23 kg
- Head circumference: 63.5 cm
- Chest circumference: 43 cm
- Mid-arm circumference: 13 cm

VITAL SIGNS

- Temperature: 101 F
- Pulse: 128/min
- Respiration: 32/min
- Blood pressure: 90/ 50 mm of hg

Her skin was too dry, pallor and skin turgor were poor. Head enlargement was present, fontanels is closed. Her hair is brown, smooth, poor hair hygiene. Her nail is abnormal shape, smooth texture, hard and pinkish. Her head is large and neck is long. Her mouth is dry and lips are pallor. Reflexes are present.

DEVELOPMENTAL HISTORY

Physical Growth

- Weight: 23 kg
- Height: 124 cm

Motor Development

Gross motor

She had achieved the gross motor development activities like sitting, walking, jumping and achieved overall large muscle movement. Rides bicycle without training wheels. Due to hospitalization all activities were restricted.

Fine motor

She had achieved hand eye coordination, manipulation of small objects, writing, holding the pen pencil, spoon, cup etc.

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Psychosocial Development

She has continued to be egocentric, has a “know it all” attitude, insists on being first in everything, return to temper tantrums-may use verbal and physical attack. She wants others children to play with her. She is Jealous of siblings and Fears injury to body.

Cognitive Development

She getting along with people and caring for personal needs.

Moral Development

She has orientation to interpersonal relations of mutuality and conforms to the group norms. Her maintenance of social order is usually identified with the preadolescent. She looks for the rule and law for guidance and decision making.

Spiritual Development

She is learning many specifics about their religion that will develop into a religious philosophy to be used in their interpretation of the world. She reaches pubescence, they begin to be less mythical in their thinking, and their beliefs are more controlled by reason**.**

Sensory Development

She has sense of taste and smell, fully mature prior to school years, allows for greater discrimination. She should be able to identify common solid objects by touch alone. She should be able to discriminate and locate the application of heat, cold or a pin prick to the body surface.

Language Development

Her receptive and expressive language was found appropriate for the age and she communicated with everyone.

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Play

She was playing with her per group children. Due to hospitalization and disease process the child's play activities were restricted.

LABORATORY INVESTIGATION

SR. NO	NAME OF INVESTIGATION	PATIENT VALUE	NORMAL VALUE
1	Hemoglobin	10.7 g/dl	10-15 g/dl
2	W.B.C	11,100 /mcl	40,00-10,000/mcl
3	R.B.C	5.14 m	31.5-35 g/dl
4	Platelets	3.03	1.5-3
5	Lymphocytes	3700 ml	3000-9,500ml
6	Neutrophils	55	1.0-8.0/l
7	Eosinophils	03	<1.01/l
8	Monocytes	05	0.2-1.0/l

Other investigation doneon patient: MRI, CT SCAN, and x-ray (skull).

MEDICAL MANAGEMENT

In order to fully evaluate the ventricular system, the patient was exposed to CT scan, MRI imaging and X-ray skull. There was a range for normal ventricular size, but ventricular size changes with age, rendering absolute measurements of ventricular dimensions of little use. Plain X-rays of skull gave an indication about large size skull with different shapes of vault, suture separation, crania lacunae, flat anterior cranial fossa, thinning of vault bones, seller changes and "beaten silver" appearance may be seen as a sign of raised ICP.

Minor complaints of the patients like fever, head ache were treated with medications. Anticonvulsive agents were administered to manage the episodes of epilepsy. Osmotic

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Diuretics were prescribed to reduce the fluid overload an to reduce intracranial pressure. Analgesics also administered to manage the pain.

SURGICAL MANAGEMENT

In order to treat the condition surgically the patient had undergone the surgical procedure called endoscopic third ventriculostomy.

NURSING MANAGEMENT

Nursing care is an essential part of any disease management. Nurses play a vital role in assessing and identifying the problems of the patient in any stage of the disease.

- Vital signs of the patient were monitored constantly
- Serial measurements of anthropometric parameters noted
- Positioning of the child was supervised
- Fluids administration were restricted
- Sleep and rest pattern assessed
- Bowel and bladder elimination were measured.

Initial days after surgery, the patient was suffered a lot due to pain and discomfort. She was not able to sleep, and unable to have food and crying frequently. Play was considered a part of diversional therapy and some artistic materials were provide to the child as play therapy. All the necessary measures were taken to keep the child happy and comfort. Parents were asked to intimate regarding any abnormalities in the child.

CONCLUSION

This case study report revealed the history of 8-year-old child with obstructive hydrocephalus. She was undergone the surgery called endoscopic third ventriculostomy and continuous post-operative care was given for 5 days in pediatric ward. Parents were advised for nutritional management and administration of medication time to time. Instructed to monitor the vital signs and anthropometric measurement and report to the physician if any abnormalities noted.

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CONFLICTS OF INTEREST

The author declares no conflict of interest

ETHICAL APPROVAL

Ethical approval for the present was obtained from the institutional ethical committee and informed consent was obtained from the parents. The patient name and other details are not disclosed here as a part of confidentiality of research ethics.

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